Operating Instructions

MSi-JM0100-USB

R. STAHL HMI Systems GmbH
Im Gewerbegebiet Pesch 14
50767 Köln

Operating Instructions Version: **01.00.01**
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Disclaimer

Publisher and copyright holder:

R. STAHL HMI Systems GmbH
Im Gewerbegebiet Pesch 14
D-50767 Köln

Company located at:	Cologne
Court of registration:	District court Cologne, HRB 30512
VAT number:	DE 812 454 820

Telephone:	(switchboard)	+49/(0)221/ 5 98 08	- 200
	(hotline)		- 59
Fax:			- 260
E-mail:	(switchboard)	office@stahl-hmi.de	
	(hotline)	support@stahl-hmi.de	

This documentation has been produced and checked with due care.
R. STAHL HMI Systems GmbH shall, however, not accept liability for any mistakes in this and all other documents.

Any warranty claims are limited to the right to demand amendments. Liability for any damage that might result from the content of this description or all other documentation is limited to clear cases of premeditation.

We reserve the right to change our products and their specifications at any time, provided it is in the interest of technical progress. The information in the current manual (in the internet) or in the operating instructions included with the mouse applies.

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Table of contents

1 Preface

These Operating Instructions contain all aspects relevant to explosion protection for the MSi-JM0100-USB*. They also contain information on the connection and installation (etc.) of these devices.

⚠ For the correct operation of all associated components please note, in addition to these operating instructions, all other operating instructions enclosed in this delivery as well as the operating instructions of the additional equipment to be connected.

2 Device function

The type MSi-JM0100-USB* mouse are used to enter data, commands etc. on PCs and similar devices in hazardous areas.

The type MSi-JM0100-USB* mouse are explosion-protected equipment for installation in hazardous areas, in zone 1 and 2. The devices may be connected to intrinsically safe USB interfaces. Power supply and data communication takes place via the Interface. The mouse are connected with a fixed cable.

3 Technical data

Function / Equipment	**MSi-JM0100-USB***
Power supply	via USB interface
Connections	via a fixed connected cable, max. length 1.8 m
Cable type	0.08 mm² / AWG28
Cable wire (numbers)	4
Mouse weel design	Tilt-Wheel
Design	Right hand design
Number of keys	5
Scanning	optical
Resolution	500 / 1000 dpi (adjustable)
Ambiant conditions	
Ambient temperature range	0°C ≤ Ta ≤ +40°C
Storage temperature	–15°C ≤ Ta ≤ +60°C
Housing color	black
Ingress protection	IP20
Dimensions [mm] [LxWxH]	107 x 66 x 41
Weight [g]	200

4 Conformity to standards

The MSi-JM0100-USB* mouse comply with the following standards and directives:

Standard	**Classification**
Directive 94/9/EC	
IEN 60079-0 : 2012	General requirements
IEC 60079-11 : 2012	Protection by intrinsic safety "i"

5 Certificates

The MSi-JM0100-USB* mouse are certified for installation in the following areas:
Europe:
according to ATEX Directive 94/9/EC
for installation in zones 1 and 2
International:
IECEx (International Electrotechnical Commision System for Certification to Standards for Electrical Equipment for Explosive Atmospheres)

5.1 ATEX

The ATEX certificate is listed under the following certification number:

Certificate number: BVS 13 ATEX E 028 X

5.2 IECEx

The IECEx certificate is listed under the following certification number:

Certificate number: IECEx BVS 13.0038

You can access all IECEx certificates on the official website of the IEC under their certificate number. http://iecex.iec.ch/iecex/iecexweb.nsf/welcome?openform.

6 Marking

Manufacturer	R. STAHL HMI Systems GmbH
Type code	MSi-JM0100-USB*
CE classification:	CE 0158
Testing authority and certificate number:	BVS 13 ATEX E 028 X IECEx BVS 13.0038
Ex classification:	
ATEX guideline 94/9/EC	Ex II 2 G Ex ia IIC T4 Gb
IECEx	II 2 G Ex ia IIC T4 Gb

7 Permitted maximum values

7.1 Intrinsically safe values MSi-JM0100-USB*

Output parameters:			Input parameters:		
U_{Omax}	=	U_{Imax}	U_{Imax}	=	5.9 V AC/DC
I_{Omax}	=	I_{Imax}	I_{Imax}	=	2.7 A
P_{Omax}	=	P_{Imax}	P_{Imax}	=	not limited
			C_{Imax}	=	38 µF
			L_{Imax}	=	0.9 µH

U_{Omax} is identical with U_{Imax},
I_{Omax} is identical with I_{Imax}

8 Type code

MSi-JM0100-USB*

* any alphanumeric or symbolic characters, without relevance for explosion protection

9 Safety Advice

This chapter is a summary of the key safety measures. The summary is supplementary to existing rules which staff also have to study.
The safety of persons and equipment in hazardous areas depends on compliance with all relevant safety regulations. Thus, the installation and maintenance staff carry a particular responsibility, requiring precise knowledge of the applicable regulations and conditions.

9.1 Installation and operation

Please note the following when installing and operating the device:

- The national regulations for installation and assembly apply (e.g. EN/IEC 60079-14).
- The mouse may be installed in zones 1 or 2.
- The intrinsically safe circuits must be installed according to applicable regulations.
- Cables for intrinsically safe wiring have to pass a test voltage of AC 500 V / DC 750 V. Use the values 200 pF/m and 1 µH/m at unknown cable properties. Do not use premounted interface cable of MSi-JM0100-USB* in Zones 0 or 20.
- When the interface of intrinsically safe devices/partial intrinsically safe devices was or is connected to not intrinsically safe interfaces, the license will become void and it must be operated as a not intrinsically safe device. If the device was operated on an intrinsically safe interface with a lower level of international protection (e.g. a Ex ia device on a Ex ib interface), it must not be operated afterwards in applications for a higher level of international protection (e.g. Ex ia).
- Interconnecting several active devices in an intrinsically safe circuit may result in different safe maximum values. This could compromise intrinsic safety !
- The safe maximum values of the connected field device(s) must correspond to the values listed on the data sheet or the EC type examination certificate.
- During assembly and operation of the mouse electrostatic surface charging must not exceed that caused by manual rubbing.
- National safety and accident prevention rules.
- Generally accepted technical rules.
- Safety instructions contained in these operating instructions.
- Any damage may compromise the explosion protection !

Use the device for its intended purpose only (see "Device Function").
Incorrect or unauthorized use and non-compliance with the instructions in this manual will void any warranty on our part.
No changes to the device that compromise its explosion protection are permitted !
The device may only be installed and operated in an undamaged, dry and clean condition !

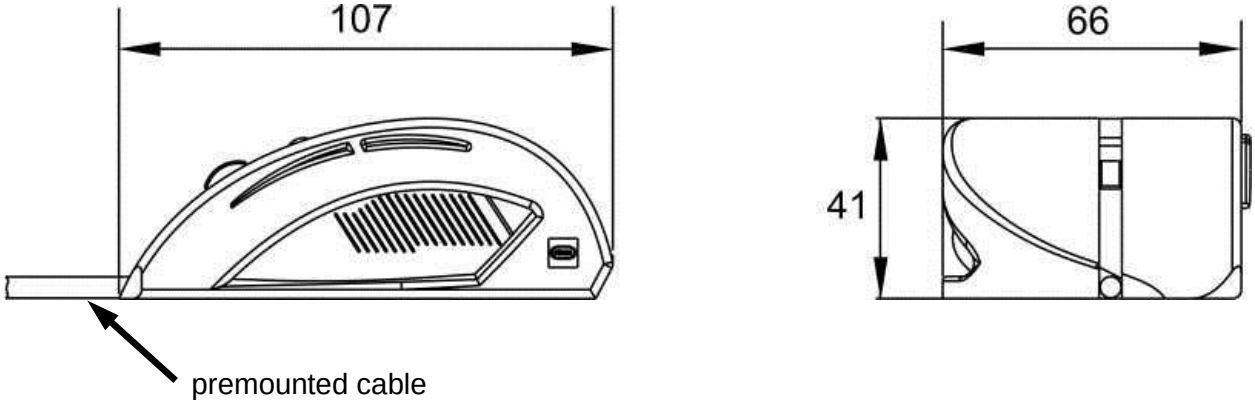
9.2 Cautionary note

Caution:
This is an EN 55022 Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

10 Mechanical dimensions

View:

Dimesions in mm
107 x 66 x 41 (L x W x H)



11 Connections Mouse

The mouses are fitted with a fixed cable which is 1.8 metres long.

Cable	Colour	Signal name	Definition
1	Red	U	Power supply input
2	White	D-	Data D-
3	Green	D+	Data D+
4	Black	GND	GND

12 Maintenance, service

Associated equipment is subject to maintenance, service and testing according to guidelines 1999/92/EC, IEC 60079-19, EN 60079-17 and BetrSichVer (Betriebssicherheitsverordnung - Occupational Safety and Health) !

Because the transmission of the devices remains reliable and stable over long periods of time, regular adjustments are not required.

12.1 Servicing

In accordance with IEC 60079-19 and EN 60079-17, operators of electric plants in hazardous areas are obliged to have them serviced by qualified electricians.

13 Troubleshooting

Devices operated in hazardous areas must not be modified. Repairs may only be carried out by qualified, authorized staff specially trained for this purpose.

☞ Repairs may only be carried out by specially trained staff who are familiar with all basic conditions of the applicable user regulations and – if requested – have been authorized by the manufacturer.

14 Disposal

Disposal of packaging and used parts is subject to regulations valid in whichever country the device has been installed.
The disposal of devices sold after August 13th, 2005, and installed in countries under the jurisdiction of the EU is governed by directive 2002/96/EC on waste electrical and electronic equipment (WEEE). Under this directive, moused are listed in category 9 (monitoring and control instruments).
We shall take back our devices according to our General Terms and Conditions.

14.1.1 ROHS directive 2002/95/EC

The prohibition of hazardous substances as detailed in directive 2002/95/EC (ROHS) does not apply to electronic equipment of categories 8 and 9, and is therefore not applicable to the equipment described in these operating instructions.

14.1.2 China ROHS labelling

According to new Chinese legislation in force since 01.03.2007, all devices containing hazardous substances must be labeled accordingly.

For our mouse, the following conditions apply:

Names and contents of toxic or hazardous substances or elements:

Part	**Toxic or hazardous substances and elements**					
Name	**Lead (Pb)**	**Mercury (Hg)**	**Cadmium (Cd)**	**Hexavalent Chromium (Cr (VI))**	**Polybromi-nated Biphenyls (PBB)**	**Polybrominated diphenyl ethers (PBDE)**
Housing	O	O	O	O	O	O
all PCBs	**X**	O	O	O	O	O
Miscellaneous	O	O	O	O	O	O

O Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirements in SJ/T11363-2006.

X Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials for this part is below the limit requirements in SJ/T11363-2006.

15 Certificates

15.1 Declaration of EC conformity

EG-Konformitätserklärung
EC-Declaration of Conformity
Déclaration de Conformité CE

R. STAHL HMI Systems GmbH • Im Gewerbegebiet Pesch 14 • 50767 Köln, Germany
erklärt in alleiniger Verantwortung, *declares in its sole responsibility, déclare sous sa seule responsabilité,*

dass das Produkt *that the product* *que le produit*	Maus *Mouse* *Souris*
Typ, *type, type:*	**MSi-JM0100-USB*** *any alphanumeric or symbolic characters, without relevance for explosion protection
Kennzeichnung, *marking, marquage:*	Ex II 2G Ex ia IIC T4 Gb CE 0158
mit der EG-Baumusterprüfbescheinigung, ***ausgestellt durch Benannte Stelle:*** *under EC-Type Examination Certificate,* *issued by notified body:* *avec Attestation d'examen CE de type,* *exposé par organisme notifié:*	**BVS 13 ATEX E 028** **DEKRA EXAM GmbH (ID0158)** **Dinnendahlstraße 9** **44809 Bochum** **Germany**

auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt
which is the subject of this declaration, is in conformity with the following standards or normative documents
auquel cette déclaration se rapporte, est conforme aux normes ou aux documents normatifs suivants

Bestimmungen der Richtlinie *Terms of the directive* *Prescription de la directive*	Nummer sowie Ausgabedatum der Norm *Number and date of issue of the standard* *Numéro ainsi que date d'émission de la norme*
94/9/EG: ATEX-Richtlinie *94/9/EC: ATEX Directive* *94/9/CE: Directive ATEX*	EN 60079-0: 2012 EN 60079-11: 2012
2004/108/EG: EMV-Richtlinie *2004/108/EC: EMC Directive* *2004/108/CE: Directive CEM*	EN 55024 EN 55022

Köln, 18.03.2013

Ort und Datum
Place and date
Lieu et date

J. Düren
Technical Director

W. Bertges
Quality Manager

Datei: CE_MSi-JM0100-USB_20130508.docx Vorlage: F058_EG-Konferklärung-HMI_20110325.docx

15.2 ATEX certification

Translation

(1) EC-Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC

(3) No. of EC-Type Examination Certificate: **BVS 13 ATEX E 028**

(4) Equipment: **Mouse type MSi-JM0100-USB***

(5) Manufacturer: **R. STAHL HMI Systems GmbH**

(6) Address: **Im Gewerbegebiet Pesch 14, 50767 Köln, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the test and assessment report BVS PP 13.2060 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2012 General requirements
EN 60079-11:2012 Intrinsic safety „i"

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the appendix to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2G Ex ia IIC T4 Gb

DEKRA EXAM GmbH
Bochum, dated 18th march 2013

Signed: Hans Christian Simanski — Certification body

Signed: Dr. Franz Eickhoff — Special services unit

Page 1 of 2 to BVS 13 ATEX E 028
This certificate may only be reproduced in its entirety and without change.
DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Phone +49.234.3696-105 Fax +49.234.3696-110 zs-exam@dekra.com

(13) Appendix to

(14) **EC-Type Examination Certificate**
BVS 13 ATEX E 028

(15) 15.1 Subject and type

Mouse type MSi-JM0100-USB*

In the complete denomination, the asterisk is replaced by alphanumeric or symbolic characters without relevance for explosion protection.

15.2 Description

The Mouse type MSi-JM0100-USB* is an intrinsically safe apparatus for connection to intrinsically safe interfaces. It is supplied via a permanently connected 4-wire-cable with max. 1,8 m length.

15.3 Parameters

15.3.1 Intrinsically safe power supply and data input in level of protection „Ex ia IIC"
Wires (1,2,3)-4

Max. input voltage	Ui	DC	5.9	V
Max. input current	Ii		2.7	A
Max. internal capacitance	Ci		38	µF
Max. internal inductance	Li		0.9	µH

The maximum internal capacitance and inductance respect a length of 1,8 m for the permanently connected cable.

Max. output voltage	Uo	5.9	V)[1]
Max. output current	Io	2.7	A)[2]

)[1] Uo identical with Ui
)[2] Io identical with Ii

15.3.2 Ambient temperature range Ta -20 °C ... +50 °C

(16) Test and assessment report

BVS PP 13.2060 EG as of 18th march 2013

(17) Special conditions for safe use

None

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH
44809 Bochum, 18th march 2013
BVS-Le/Ma A 20121287

Certification body Special services unit

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Phone +49.234.3696-105 Fax +49.234.3696-110 zs-exam@dekra.com

15.3 IECEx certification

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx BVS 13.0038	Issue No.: 0	Certificate history:
Status:	Current		
Date of Issue:	2013-03-25	Page 1 of 3	

Applicant: **R. Stahl HMI Systems GmbH**
Im Gewerbegebiet Pesch 14
50767 Köln
Germany

Electrical Apparatus: **Mouse Type MSI-JM0100-USB***
Optional accessory:

Type of Protection: **Equipment protection by intrinsic safety "i"**

Marking: Ex ia IIC T4 Gb

Approved for issue on behalf of the IECEx Certification Body: H. Ch. Simanski

Position: Head of Certification Body

Signature: (for printed version)

Date: 25/3/2013

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
DEKRA EXAM GmbH

IECEx Certificate of Conformity

Certificate No.: IECEx BVS 13.0038

Date of Issue: 2013-03-25 Issue No.: 0

Page 2 of 3

Manufacturer: **R. Stahl HMI Systems GmbH**
Im Gewerbegebiet Pesch 14
50767 Köln
Germany

Additional Manufacturing location (s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards.

IEC 60079-0 : 2011 Explosive atmospheres - Part 0: General requirements
Edition: 6.0
IEC 60079-11 : 2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition: 6.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:
DE/BVS/ExTR13.0039/00

Quality Assessment Report:

DE/BVS/QAR06.0007/06

IECEx Certificate of Conformity

Certificate No.: IECEx BVS 13.0038

Date of Issue: 2013-03-25 Issue No.: 0

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Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

Subject and type
Mouse type MSi-JM0100-USB*

In the complete denomination, the asterisk is replaced by alphanumeric or symbolic characters without relevance for explosion protection.

Description

The Mouse type MSi-JM0100-USB* is an intrinsically safe apparatus for connection to intrinsically safe interfaces. It is supplied via a permanently connected cable with max. 1.8 m length.

Parameters

1 Intrinsically safe power supply and data input in level of protection "Ex ia IIC"
Wires (1,2,3)-4

Max. input voltage	Ui	DC 5.9	V
Max. input current	Ii	2.7	A
Max. internal capacitance	Ci	38	µF
Max. internal inductance	Li	0.9	µH

The maximum internal capacitance and inductance respect a length of 1,8 m for the permanently connected cable.

Max. output voltage	Uo	5.9	V)[1]
Max. output current	Io	2.7	V)[2]

)[1] Uo identical with Ui
)[2] Io identical with Ii

2 Ambient temperature range Ta 20 °C ... +50 °C

CONDITIONS OF CERTIFICATION: NO

16 Release notes

The chapter entitled "Release Notes" contains all the changes made in every version of the Operating Instructions.

Version 01.00.00

- First edition, for approval

Version 01.00.01

- Including all relevant information from approval
- Including mechanical drawings
- Including declaration of EC conformity
- Including certificates
- Addition of technical data
- Text and layout corrections

R. STAHL HMI Systems GmbH
Im Gewerbegebiet Pesch 14
D-50767 Köln

Phone:	(switchboard)	+49/(0)221/ 5 98 08	- 200
	(hotline)		- 59
Fax:			- 260
E-mail:	(switchboard)	office@stahl-hmi.de	
	(hotline)	support@stahl-hmi.de	

www.stahl.de
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